1962 ANNUAL REPORT

NATIONAL PLANT MATERIALS CENTER

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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NATIONAL PLANT MATERIALS CENTER

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Soil Conservation Service
National Plant Materials Center
Beltsville, Maryland

Introduction

The National Plant Materials Center, one of eighteen plant testing units operated by the Soil Conservation Service of the U. S. Department of Agriculture, occupies approximately 550 acres of the Agricultural Research Center at Beltsville, Maryland.

The Research Center lies at the junction of the Coastal Plain and Piedmont Regions of Maryland, and soils of the area are characterized as a mixture of those common to these regions. The average temperature for January is 34° F., and the average July temperature is 75.8° F. Periodically, winter temperatures drop to 10° to 15° below zero F. Rainfall averages about 42 inches per year with equal distribution during the growing season. Normally, there is a slight drop in monthly precipitation during October, November and December; otherwise, rainfall averages between 3 and 4 inches each month. Temperatures during the winter of 1962-1963 were lower than average, and for the second consecutive year, precipitation was under normal for the area.

New Accessions

More than 1,400 new accessions were received during 1962, contributed by Arboreta; State Experiment Stations; New Crops Research Branch of ARS (both direct and through their Regional Plant Introduction Stations); Forage Crops Division of ARS; and from our SCS plant materials centers and technicians. Included in this material were several hundred items from the world collection of the Commonwealth and Industrial Research Organization, Canberra, Australia.

Collections of the following major genera were made and distributed: *Desmodium*, *Glycine*, *Lespedeza*, *Medicago*, *Panicum*, *Pennisetum* and *Trifolium*. In addition, an assembly of bush-type *Salix* spp. was initiated, and some fifty-two new accessions distributed to two of the plant materials centers.

Production and Distribution

As a result of the March 1962 storm along the East Coast which destroyed miles of dunes, the initial studies on the production of American beachgrass (*Ammophila breviligulata* Fern.) were intensified. 58,000 plants were made available from this center to the Soil Conservation Districts in the Northeast and Southeast regions, and were placed in newly created nurseries for secondary production. In addition, seed was collected and distributed for direct seeding at these nurseries. Additional stock from the original planting will be available for distribution during the 1963-1964 season.

The final production of black locust (*Robinia pseudoacacia* L.) was completed this year. Subsequent production of the old standard clones will be carried on at the Big Flats Plant Materials Center, whereas any new

Production and Distribution - Continued

clones that may be added to this study will be started at the National Plant Materials Center.

TUFCOTE bermudagrass, which was selected here for its durability under foot traffic and its cold hardiness, has been released cooperatively by the Soil Conservation Service, the Maryland Experiment Station, and the Crops Research Division of Agricultural Research Service. Reports on climatic adaptation will be coming from plantings made at ten experiment stations and five plant materials centers, ranging from Rhode Island to Kansas to Alabama.

Domestic distribution of seed packets was about normal for the year. Shipments of vegetative material increased. Again this year there was an increase in the number of packets going to the Northeast, Southeast and Great Plains areas, but a dropping off in shipments to the Pacific West.

Eighty-seven countries contributed conservation materials to our program during 1962, but our distribution of materials to foreign nations dropped somewhat from the previous year, a total of 417 packets going to 23 different countries.

SCS/NAVY Cooperative Ground Cover Study

This project was continued during the year. The previous plantings and the 1962 plantings are being observed and evaluated with respect to selection of mixtures and cultural techniques for these difficult sites. Much of the material under study is suitable to other regions and should be placed under initial observation at plant materials centers, particularly with the new emphasis on plant materials which fit into the recreational aspects of agricultural lands.

Notes

It will be noted in this report that many items grown for seed renewal are listed on a separate chart, and are not included in the performance notes.

Many re-identifications were made during the year, but there were no changes in nomenclature to be included in this report.

A paper, "Factors Influencing Crownvetch Germination and Establishment", was presented by Clifford L. Williams at the American Society of Agronomy Annual Meeting in Ithaca, New York. At the same meeting Robert B. Thornton presented a paper on "Low Growing Vegetation -- Selection and Trials for Steep Slopes".

Aeluropus repens (Desf.) Parl.
Found on the shores and salt marshes of the Arabian Sea, extending to the Mediterranean region and northeast Africa. Is possibly of importance in inhospitable regions for the very reason that little else grows in such places. PI-264357 from USSR is hardy at Beltsville, and is both rhizomatous and stoloniferous. Distributed to New York and Mississippi.

Agropyron elongatum (Host) Beauv. 2 n = 14
PI-264770 from Germany was lacking in stems and leaves, but did produce a good seed crop. No distribution.

Alopecurus pratensis L. 4 n = 28
Eighty-two accessions, PI-273280 through 273361, were received from the Netherlands, each number representing a single seed head collected by a plant breeder near Wageningen. Information on many of these accessions is given in the charts, and observation will continue on the more promising ones. Distribution of this species was made to Oregon.

Ampelodesmos mauritanicus (Poir.) Dur. & Schinz.
Native of Algeria and Tunisia where it is associated with dense oak forests. Plants which have been protected from frost are now two years old. PI-269843 and PI-269844 have grown to 13"x9", but have never bloomed. According to Hitchcock, this species is now established in Napa County, California. No distribution.

Andropogon gerardi Vitman
During the second growing season we observed three accessions from Concord, New Hampshire. NY-1668 had a uniform height of five feet, while NY-1284 ranged from four feet to six feet. There was no difference in the two except height. NY-1667 was uniform in height and much leafier than 1668 and 1284. NY-1284 went to Mississippi.

Apluda mutica L. 2 n = 20, 40
Although the same culture techniques were employed this year as during the previous year, results were far better. 1962 plants were far more vigorous, larger in size and leafier. Also, a good seed crop was produced this year. For additional information, see "Notes and Comment" section of 1961 Annual Report for PI-271556. No distribution.

Aristida uniplumis Roem. & Schult.
This perennial grass helps comprise the temporary grass cover on the sandy flats of the coastal desert area of the Union of South Africa, which ranges in altitude from sea-level to 1,000 ft., and receives less than 12 in. of rainfall annually. PI-276026 produced an excellent seed crop which is available for distribution. Has been sent to California.

Bothriochloa insculpta (Hochst.) A.Camus 2 n = 60
Stoloniferous perennial which comes from tropical Africa and India. Forms close turf when heavily grazed. In East Africa is one of best grazing grasses in open savanna grassland with rainfall of 20 to 30 in. Although not dominant in the African flora, it is found in association with various dominant species on the heavier soils. PI-275083 from India shows promise with its aggressiveness and abundance of leaves and stems. No distribution.

Bothriochloa ischaemum (L.) Keng. 2 n = 40, 60
Although native to central and southern Eurasia and India, PI-268361 and 269364 from Afghanistan are winter hardy at Beltsville. They have performed favorably, with abundant heads but poor fill. No distribution.

NOTES AND COMMENT

Brachypodium sylvaticum (Huds.) Beauv. 2 n = 18

Native of the eastern Mediterranean region. PI-268222 was hardy at Beltsville, as have been other accessions of this species during previous years. PI-269842, however, did succumb to a temperature of 5° above zero F. This species has no value as a forage plant due to its coarseness. Is usually grown as an ornamental. Maybe we should forget it? No distribution.

Bromus japonicus Thunb.

Two more of the annual bromes, PI-268220 and 268221 from Iran, proved to be weedy accessions of no value and were discarded. No distribution.

Bromus macranthos Desv.

PI-264400 from Argentina was reported as a failure last year, and did little better in 1962. It is shy on leaves, small in size, and had considerable leaf spot disease. Was dead by August. No distribution.

Bromus tomentellus Boiss.

PI-268218, a hardy perennial from Iran, produced a seed crop, but lacked the leaves and stems necessary for a good forage or erosion controlling plant. See 1961 report for additional information. No distribution.

Cenchrus setigerus Vahl. 2 n = 34, 36

This tender perennial comes from the subtropical areas of northeast Africa and northwest India. It is apomictic in its breeding habits and is commonly known as birdwood grass. PI-271141 from India was a weak accession, and died during the summer. PI-271527, also from India, appeared as a promising accession, having abundant leaves and an excellent seed crop. No distribution.

Chloris truncata R.Br.

A native of Australia where it grows in the provinces of South Australia, Queensland and New South Wales between latitudes of 27° and 35°. This warm season perennial makes excellent summer and fall growth which is relished by livestock. Due to its erectness and inflorescence, C. truncata is also cultivated as an ornamental having the common name windmillgrass. PI-279931 from Australia grew to a normal height of 13 in. but was lacking in leaves and stems. Produced an abundance of seed. No distribution.

Chrysopogon gryllus (L.) Trin. 2 n = 40

This large, coarse, tufted perennial is widely spread over the tropical and warmer temperate regions of the world. PI-268375 from Afghanistan was hardy at Beltsville. During its second year it reached a height of 27 in. Australia reports this species to be an excellent pasture grass which produces a large quantity of feed during the summer months. No distribution.

Chrysopogon montanus Trin. ex Spreng.

A perennial, found on the semi-arid areas of south and central India in association with Sehima nervosum, Dicanthium annulatum and Heteropogon contortus. On the island of Madagascar off the coast of Africa, C. montanus is associated with Hyparrhenia rufa and H. dissoluta on the open savannas, with rainfall of 60 in. falling from November to March, and an annual mean temperature of 90°. It is reported that this species is being grown in Florida on light sandy soils. Three accessions from India have been hardy at Beltsville: PI-271148 has made good vegetative growth with no bloom; PI-271530 has made poor growth, but produced a good seed crop; PI-271532 has made good growth and produced seed late in October. No distribution.

NOTES AND COMMENT

Cymbopogon distans (Nees) Wats.

PI-271552 from India has an abundance of stems and leaves and appears to be a good forage plant. Its tissue, however, contains an aromatic lemon-scented substance which might tend to discourage grazing. No distribution.

Digitaria smutsii Stent.

A tender long-lived perennial out of South Africa from the 20 to 30 in. rainfall belt. It prefers a well drained loam or clay soil and shows a favorable response to fertilizer. Although it is usually utilized as hay or pasture, this species lends itself to combining as a means of seed harvesting. Unfertile seed are always present and new seed dormancy is a factor to be considered. PI-258439 showed promise here. Distribution: Florida.

Echinochloa crusgalli (L.) Beauv.

Seed from BN-7018 will be available to those making collections of plants for wildlife food. The performance of this accession from South Carolina was affected greatly by extreme summer drought. No distribution.

Ehrharta sp.

PI-270494 from South Africa died during its second summer without bloom. No distribution.

Elymus dahuricus Turcz. 2 n = 28, 42

Basic information on this species was given in last year's report. However, PI-269890 performed better in 1962 than PI-269892 which was reported in 1961. Although both accessions came from West Pakistan, PI-269890 was more vigorous and leafier, and produced an abundance of early spring growth. This species has been reported as being inferior to E. canadensis and E. glaucus in the Northwest. California has reported poor results in reseeding trials with other accessions of this species. No distribution.

Elyonurus hirsutus Munro ex Benth.

Native to northwest India, extending to the southeastern Mediterranean region. Is usually found growing in large bushy thickets in sandy deserts. It is considered to be a good fodder, but the performance of PI-271566 from India indicates it should have been tried some place other than Beltsville. No distribution.

Eragrostis atherstonei Stapf

Found in the tropical bush and savannas of the low veldt of South Africa; grows on sandy soils receiving 20 to 30 in. of summer rainfall. Grows in association with E. superba, Heteropogon contortus and Aristida spp. Is persistent even when trampled and over-grazed. PI-276033 made good growth and two seed crops at Beltsville. Distribution: New Mexico.

Festuca alopecurus Schousb.

A native of the Mediterranean region, particularly the western portion. PI-238314 from Morocco was shy on stems and leaves. Part of the original seed was distributed to the West; BN-reproduced seed went to Florida, Georgia and Mississippi.

Festuca arundinacea Schreb.

Used as hay and pasture in the northeastern, northwestern and southeastern states. Is also used extensively as a soil stabilizer on impoundments, waterways, roadbanks, etc. Its lifespan and effectiveness are increased if the plants are mowed or grazed. Performance charts on 16 accessions received from the Netherlands show considerable variation. Vegetative material is available of most accessions. PI-265352 thru 265367 have gone to New York and Florida.

NOTES AND COMMENT

Festuca ovina L. 2 n = 14, 42, 56, 70

A densely tufted perennial native to the cool, temperate areas of northern Europe and Asia. Usually found on poor sites as it is unable to compete successfully on other sites. The species is cold-tolerant and drought-resistant; has been a successful conservation plant in the Northwest on irrigation canals, road cuts and fills. PI-257740 from Hungary made good growth and produced a good seed crop at Beltsville. Distribution: Washington.

Festuca pallescens (St.Yves) Parodi

PI-269647 was received from Argentina, the native habitat of this species. At the present time, the Argentine experiment stations have it under trial. No distribution.

Festuca rubra L.

F. rubra 'Reptans', PI-189285 from Finland, appears to be a good accession here. Had no disease during summer months and maintained a dark green color. Leaves and stems were rather abundant. This is a definitely rhizomatous strain which produced a good seed crop. No distribution.

F. rubra 'Golfrood', PI-266207 from the Netherlands, is slow in developing rhizomes, shy on number of stems, and produced no seed during its second year. Distribution: New York, Michigan, Washington.

F. rubra 'Sioux', PI-266208 from the Netherlands, was very similar to 189285 in vegetative growth, but slightly inferior in seeding habit. Had excellent spring recovery, however. Distribution: New York, Michigan, Washington.

F. rubra, PI-270400 from USSR, made poor growth. As of September, the plants were almost dead - seems the Beltsville summer heat and the drought were more than this accession could tolerate. No distribution.

F. rubra, BN-12010 from Crawford Co., Pennsylvania, was better than the Russian accession, but did not compare with 'Reptans' and 'Sioux' in number of stems, leafiness, rhizomatous growth, or seed production. No distribution.

Festuca rubra var. littoralis (Vasey) Beal.

This species is being tested extensively at Germany's Marshland Research Station. Appears to be a good pasture grass, forming a thick carpet. Tolerates occasional flooding with sea water, but does not tolerate high humidity. Seeds are slow in germinating. PI-269839 from Germany looks promising. It is a poor seeder, but leaves and stems are abundant and the plants highly rhizomatous. There is some variation in color. Distribution: New York.

Hordeum bogdanii Wilensky

Area of distribution: Eastern S. Europe, southeastern part of W. Siberia, Aralo-Caspia and Balkash areas, Tianshan, eastern Turkestan to Mongolia. PI-269406 came from the mountanous area of Afghanistan near the 40° latitude line which characterizes its region of adaptation. As could be expected, this accession did poorly at Beltsville, but seed was produced which could be used at our northern plant materials centers. No distribution.

Hordeum bulbosum L. 2 n = 14, 4 n = 28

PI-274910, a new accession from Turkey, should be added to collections of this species. It appears to be an aggressive, leafy accession, with early and abundant spring growth. Distribution: California.

NOTES AND COMMENT

Hyparrhenia cymbaria (L.) Stapf

Native of tropical East Africa. PI-273927, from Ethiopia, made excellent vegetative growth at Beltsville. It was aggressive, leafy, tacked at the nodes, and appeared to be a good forage plant, but frost came too soon for seed production. Distribution: none.

Hyparrhenia hirta (L.) Stapf

Basic information on this species was given in the 1961 annual report.

PI-270496, from South Africa, grew to a height of six feet and produced a seed crop. Accession was aggressive and somewhat leafy. Distribution: Texas.

PI-273928, from Ethiopia, grew to a height of five feet, but never bloomed. Was leafier than 270496, with some leaves as much as 26 in. long. No distribution.

Ischaemum sp.

PI-271193, a strongly spreading, low-growing perennial from India provided a fairly dense mat of stems and foliage but a limited amount of seed. It spread to a width of about 8 ft. in the greenhouse and tacked at the nodes. No distribution.

Leptochloa monostachya Roem.& Schult. 2 n = 20

This species is found in Southern India, Burma and Ceylon, where it grows in the deciduous forests. PI-207633 produced seed abundantly in the greenhouse, but lacked aggressiveness and was shy in volume. No distribution.

Lolium multiflorum Lam.

PI-274638 from Poland suffered severely from the extremely dry summer of 1962. Its performance here indicated it to be no better than an average accession. Spring recovery was late and sparse. A good seed crop was produced and is available for distribution. No distribution.

Lolium perenne L.

The Australian variety 'Kangaroo Valley', PI-275660, is something new. All centers interested in ryegrass should look at this one - it is very aggressive, with abundant stems and leaves. Also, there was an abundance of early spring regrowth. Seed crop was excellent. Only negative factor was lodging, which may have been partly due to its excessive growth. Distribution: Missouri, Hawaii, Florida, Georgia, Mississippi.

Oryzopsis aequiglumis Duthie

PI-271586 comes from India, where it is native to the Himalaya mountain region of Northwest India. Is described as a robust grass with broad leaves. As could be expected, this accession made a poor showing at Beltsville, but seed is available for distribution. No distribution.

Panicum antidotale Retz. 2 n = 18

This is another species which has been around since 1912 when it first came in from Australia. Some basic information was given in the 1961 report. Three new accessions have been received, all of which proved winter hardy at Beltsville

PI-268410 and PI-269390 from Afghanistan have been very similar in vegetative growth and seeding habit. Both could be rated as average blue panic grasses.

PI-271589 from India was 66 in. tall, a foot higher than the other two. Was shy on leaves, but possessed more aggressiveness than the others.

Distribution: BN-reproduced seed to Southeast and Great Plains states.

NOTES AND COMMENT

Panicum coloratum L.

BN-12322 from Los Lunas Plant Materials Center doesn't show much promise at Beltsville. This one is from their old production block out of A-14156. No distribution.

Panicum delicatum Hughes

PI-257774 from Northern Australia does not show much promise here, even though it was grown in the greenhouse. A small-sized bunch grass, it was weak, shy on stems and a poor seed producer. Seed is available for any one wanting to try this little perennial, which has harsh, hairy basal leaves.

Panicum maximum Jacq. 2 n = 32

Guineagrass is a native of Africa, but has spread into many of the warm countries. The following have proven to be good accessions here: PI-153669, 156075, 156078, 196366 and 208996. All are leafy, but 156078 and 208996 are probably the most outstanding. Seed of all accessions is available for distribution.

PI-153669 went to Region VII, and PI-199366 to Regions II and VII. No distribution on the others.

Panicum virgatum L.

BN-9149 (NDG-965-98) is a northern type of switchgrass which has proven to be equal or superior in forage and seed production to other lines with which it has been tested at Bismarck. It is apparently too warm and humid at Beltsville for this accession, as here it lacks aggressiveness and in general appears to be a poor accession. Distribution: Cornbelt states.

Panicum virgatum var. cubense Griseb.

BN-11357 (SC-58-21) was collected at Apex, North Carolina by Karl Graetz, PMT. Seems to be a good seeding, fine-stemmed cubense. Is, however, a little shy on leaves, stems and vigor.

Paspalum notatum Flugge

This is a proven species in the Southeast. The limiting factor at present is lack of good seed; this is particularly true for the 'Wilmington' strain.

BN-11573, which is the cold hardy strain out of 'Wilmington', continues to perform well at Beltsville. However, more cold weather is needed to determine if we really have something worthwhile. 100% winter-kill '62-'63.

BN-11554 (NC-59-26), came as seed from a single clone out of a field of 'Pensacola'. PMT Karl Graetz says that it is probably 'Wilmington'. It overwintered here and during the second year was more aggressive than 11573 and the 'Underwood' strain. 100% kill, winter of '62-'63.

'Underwood', BN-11553, NC-59-31, continues to look good. More information on these three accessions can be gained from the performance charts. 'Underwood' also had 100% kill winter of '62-'63.

Distribution: none

Pennisetum alopecurus Steud. 2 n = 18

PI-269235 from India has leaves too harsh to be utilized by livestock. The chief economical value of this species lies in broom and cordage manufacture. In western India it is found on sandy soil near streams and lakes south of 24° latitude. Once established it is very persistent, excluding most other vegetation. It does grow in association with another gregarious species, Dicanthium caricosum (L.) A.Camus, which is relished by livestock.
No distribution.

NOTES AND COMMENT

Pennisetum ciliare (L.) Link.

There are three new accessions which should be added to the collections of this species.

PI-273256 from South Africa is an aggressive, good tillering, good seed producing buffelgrass. A little shy on stems and leaves, however.

PI-274082, also from South Africa, is very similar to the above, but is definitely rhizomatous.

PI-275102 from India produced more vegetative growth than the others. Some plants were rhizomatous and toward the end of the growing season were showing up quite well. This accession is late in maturing, as seed was not harvested until early October.

Distribution: PI-273256 to Florida; no distribution of PI-274082, 275102

Pennisetum macrourum Trin.

PI-273257 from South Africa is a big, erect, coarse-stemmed bunch grass. Many seed heads were 15 in. long. Is strongly aggressive, but its use in the United States is yet to be determined. Distributed to Texas, Florida.

Phalaris aquatica L.

Seven new accessions from the Mediterranean area have been received. Additional information to that given in the charts:

PI-266227 - weak accession, poor seeder. Distribution: California
266228 - aggressive, abundant fall growth. Distribution: Calif.
249836 - aggressive, leafiest, good seeder. No distribution
249837 - aggressive, uniform ripening, fair seeder - no distribution.
207961 - aggressive, has most fall regrowth. No distribution
207968 - aggressive, good uniform seeder. No distribution
240249 - weak, fair seeder. Distribution: California

All accessions have been winter hardy at Beltsville.

Phalaris aquatica X arundinacea

PI-271441 from Italy was superior to PI-206710 from Turkey. It was more aggressive, had greater number of stems and leaves, more fall regrowth and was a better seed producer. No distribution.

Phalaris arundinacea L.

Of the ten reed canarygrasses being reported this year, 'Ottawa Syn. #2' and 'San Joaquin 2178' produced the most vegetative growth, but both were lacking in seed production. The two accessions from Poland, PI-272122 and 272123 have been very disappointing at Beltsville.

Distribution:

BN-9176 - Cornbelt States
BN-10212, 10213, 10214 - Michigan, Florida, Oregon, North Dakota
PI-272122, 272123 - New York, Georgia, Washington
PI-251842, 253315, 253317, 255887 - no distribution

Phalaris truncata Guss.

Native to the Mediterranean region. PI-269858, from Tunisia, was not outstanding in its performance at Beltsville, but the collector's note says that it is a good ground cover in its native habitat. No distribution.

Phleum pratense L.

Two new accessions, PI-270543 from India and PI-274643 from Poland, are promising at Beltsville. Both are strongly aggressive and were early to recover in the spring. PI-270543 bloomed two weeks earlier than the other. No distribution.

Plagiochloa uniola (L.f.) Adamson & Sprague

PI-274083 comes from South Africa where the plants form small bushy clumps to two feet high and have numerous stems. Our plants died during the summer without bloom. Distribution: California

Pletrachne bynoei C.E.Hubb.

PI-257786 comes from tropical West Australia. Produced some seed in the greenhouse, but will have to be field planted in a warm region for proper evaluation. No distribution.

Poa australis R. Br.

PI-268416 was collected by Jack Harlan on a rocky terrace in Afghanistan. Normally grows in areas where moisture and fertility are more abundant. Is found in various sections of Australia below the 30° latitude line. The species is reportedly highly variable. Somewhat promising at Beltsville. No distribution.

Poa bulbosa L.

PI-268415 from Afghanistan has been a poor accession here. It is, however, about average for the accessions of this species tried here. Apparently hasn't the vigor for the Beltsville climate. No distribution.

Poa glaucantha Gaudin. P-410

This accession has made early recovery both spring and fall here at Beltsville. It lacks aggressiveness, but did produce a fair seed crop in late June.

Poa lanuginosa Poir.

PI-264406 was received from the Argentine Agricultural Experiment Station at Santa Cruz. It is a highly rhizomatous plant which grows over sand dunes there. Its performance at Beltsville was unsatisfactory, but from the ecological viewpoint maybe that is to be expected. Distribution: New Mexico.

Poa pratensis L.

PI-266209, 'Prato', from the Netherlands, and PI-269392 from Afghanistan are both outstanding. They have produced excellent seed crops with little shattering of seed. Spring recovery has been both early and abundant. Disease has not been a problem with these accessions as is often the case with cool season grasses at Beltsville. Distribution: PI-266209, Washington; PI-269392, none.

Rhynchelytrum roseum (Nees) Stapf & Hubb. 2 n = 36

This is a short-lived perennial which comes from South Africa, and which has become naturalized on sandy prairies, open woods, fields and waste places in Florida, Texas and Arizona. In its native habitat it grows on disturbed granite sand areas, and on areas of low fertility, particularly as a succession species toward the Hyparrhenia grass cover climax. Yields two to four cuttings of highly nutritious hay in Florida. PI-201889 from Israel looks especially good here. No distribution.

Secale montanum Guss.
PI-274912 from Turkey was shy on leaves, but otherwise made good performance at Beltsville. Is an aggressive accession, making early spring recovery and producing a good seed crop. Distribution: Washington

Setaria sphacelata (Schum.) Stapf & Hubb.
PI-282707 came to us from China as vegetative material. Due to poor seed production, distribution will probably have to be made in the same manner. This is a robust vigorous accession which should be added to S. sphacelata collections. Distribution: Florida

Thaumastochloa pubescens (Domin) C.E.Hubb.
This species is native to tropical West Australia and Northern Territory. It is an annual which grows in well drained open areas. PI-257804 has harsh leaves which would render it of little value as a forage plant. Distribution: Florida.

Themeda anathera (Nees) Hack.
PI-271553 comes from India. The species is found in the Himalaya Mountain region of India and Afghanistan at altitudes of 4500 to 9000 ft. This accession has been hardy here and has made excellent vegetative growth, but has never bloomed. No distribution.

LEGUMES & OTHER

Alysicarpus rugosus (Willd.) DC
This is a North American species which has been introduced into India, where it grows in natural grassland areas that are irrigated. Reseeds itself well and the stand is maintained in spite of indiscriminate grazing and cutting. PI-286530 - no distribution.

Antopetitia abyssinica A. Rich.
Native of the Cherangani Region of Kenya where it is a common annual. Has small yellow flowers, and segmented pods. Produces seed freely in its native climatic habitat and would probably reseed itself. PI-193736 was received as Indigofera sp. - no distribution.

Centrosema virginianum Benth.
This twining perennial is a good food for bobwhite quail in the southeast. Usually found in dry sandy areas in the coastal states and west to Texas. BN-11566 (NC-60-5) - no distribution.

Crotalaria spp.
These were planted for seed renewal and for the purpose of identifying the unknowns. Many suffered severe disease damage and died during the early summer before blooming.

Desmodium spp.
Like the Crotalarias, the Desmodiums were also planted for seed renewal and identification. Only the following bloomed and set seed:

BN-4753, A-9312 -	D. batocaulon
PI-168581	D. purpureum
PI-168582	D. purpureum
PI-186311	D. varians
BN-4766	D. sp.

NOTES AND COMMENT

Enchylaena tomentosa R.Br.
Procumbent, small-leaved shrub, thriving at the University of California. Fruit yellow or red, fleshy and berry-like. Australian aborigines said to eat the berries in great quantities. The plant endures drought, and is eaten by sheep when other herbage becomes scarce. Likes a dry, mild climate. PI-279185 has been distributed to Hawaii and California.

Exomis axyrioides Moq.
Comes from the Union of South Africa. PI-270495 is a wild local form which is high in protein and is being tested for forage use. Produced seed here during its second year. Distribution: California, Arizona.

Hedysarum coronarium L.
This is a deep-rooted perennial herb of the Mediterranean region, climatically adapted to those areas of the temperate and sub-temperate zones having mild winters. It is considered to be drought resistant, but shows good response to irrigation; prefers deep, rich, calcareous soils, but does well on poor soils as long as they contain lime. PI-173372 - no distribution.

Indigofera arrecta (A.Rich.) Hochst.
An erect perennial which is somewhat drought resistant. In the tropical and sub-tropical zones where it is primarily adapted, it is used as a green manure crop. PI-199342, PI-199344 - no distribution.

Indigofera cordifolia Heyne ex Roth
At Beltsville this grows as a small, soft, prostrate plant. Seemed to be weak, which might be due to improper inoculant. Seed matured the first week in December, indicating that it is almost too late for us. Native of Eastern Hemisphere tropics. PI-189495 was distributed to Region II in 1951.

Indigofera endecaphylla Jacq. = I. spicata Forsk.
This prostrate trailing indigo is somewhat drought resistant. Will tolerate acid soils and in its climatic region of adaption, the tropics and sub-tropics, is used as a green manure crop as well as pasture and fodder. It is reported that seed production is often low and propagation is made by cuttings. Grows well with Paspalum dilatatum, Pennisetum purpureum, and Panicum maximum. Some strains said to be poisonous. PI-185532 - No distribution.

Indigofera glandulosa Wendl.
Native of tropical areas of Asia and Australia. PI-189946 from India produced seed here, but its vegetative growth was not outstanding. Distribution: original seed of this accession went to the Southeast.

Indigofera kirilowii Maxim.
Native of Northern China and Korea. It is a rhizomatous low shrub to three ft., sometimes used as a ground cover. Ours has never produced seed. PI-269731 - no distribution.

Indigofera parodiana Burkart
Native of Argentina. PI-197553 came to us from Australia where it had been reproduced in Queensland province. Original seed was distributed to Region II in 1952.

Indigofera practicola Baker
Native of Southern Rhodesia. PI-185553 - no distribution.

Indigofera rautaneni Baker
Native of tropical Africa. PI-185593 - no distribution.

NOTES AND COMMENT

Indigofera suffruticosa Mill.
Perennial shrub three to six feet in height. Native of tropical America. Used as a green manure crop and as a source of indigo dye.
PI-188885 - no distribution.

Lathyrus aphaca L.
Native of Europe and the East. Ours came from Afghanistan. From a September seeding, there was 60% winter-kill. Could possibly be used as a winter cover crop in areas south of Beltsville.
PI-286527, 286528 - no distribution.

Lathyrus sativus L.
An erect annual, native to Europe, northern Africa and the East. It is reported to be of little value in the United States, but is grown in limited areas of Iowa, Texas, California and Washington, also in Ontario, Canada. Its seeds are supposedly not attacked by the pea-weevil.
PI-286531 - no distribution.

Lespedeza capitata Michx.
The accession from Massachusetts, NY-1862, was not very impressive during the first year, but as could be expected did set seed. Renewed interest in this species was originated by a French pharmaceutical firm which is using it in the manufacture of a drug product. No distribution

Lespedeza cuneata (Dumont) G.Don
PI-259459 and 259460 from Japan are upright forms, but are inferior to common sericea and will be discarded. Also, these are less leafy than the better Nasu selections from Japan. Distribution: original seed of both accessions went to Georgia and North Carolina

L. cuneata, BN-10849 out of PI-186171, is a prostrate form from Japan. During the next growing season the performance of this accession may improve, but now it seems inferior to L. cuneata, BN-9249 (also from Japan). Seed of BN-10849 is available for distribution and should be added to the collections of prostrate lespedezas. Distribution: Karl Graetz, PMT

Lespedeza striata Hook.& Arn.
BN-10410 from Japan is one of the better annual lespedezas tested here. It is strongly aggressive, and stems and leaves are abundant. It produces an excellent, uniform-ripening seed crop, and also does an excellent job of reseeding itself. Distribution: Georgia

Medicago polymorpha var. vulgaris Gaertn.
PI-286534 - another burclover from Ethiopia - not much different than the average. No distribution.

Medicago lupulina L.
PI-263243 from Afghanistan is a vigorous accession and good seed producer. However, it is not high in yield, nor is it drought resistant. Reportedly, this species requires more lime than white clover. No distribution.

Medicago sativa L.
Beltsville is a bad spot for all M. sativas. Two accessions, from Afghanistan and Spain, followed the usual pattern of poor performance. Seed of PI-268408 from Afghanistan and PI-269168 from Spain is available. No distribution.

NOTES AND COMMENT

Onobrychis gaubae Bornm.

Should be confined to the dry climatic regions at high elevations. Our seed from the Pullman, Washington, P. I. Station was all planted and died. PI-211055 - no distribution.

Phaseolus mungo L.

Central Asia is the origin of this procumbent annual. It is used as a green manure and cover crop. All varieties are subject to nematodes. PI-279475 - Distributed to Hawaii.

Robinia pseudoacacia L.

Five new clones were added to the black locust study. Increase should be adequate for distribution in the spring of 1964.

BN-12312	CSF #1	Cumberland, Ohio
12313	CSF #3	" "
12314	CSF #2	" "
12363	Tree #1	Harrisville, Michigan
12364	Tree #2	" "

Trifolium hybridum var. pratense Rabenh. = T. elegans Savi

Native of the Mediterranean region, Asia Minor, North Africa. PI-257807 - Distribution: New York

Trifolium incarnatum L.

It is possible that this crimson clover accession, PI-255393 from Yugoslavia, may be more hardy than the commercial strains. Our seed for distribution comes from a single plant. Distribution: original seed to Georgia.

Vicia americana Muhl.

PI-241081 from Montana over-wintered and then died during the spring. Can't stand our hot, humid climate. No distribution.

Vicia villosa Roth

PI-286521 performed as an annual under greenhouse production. Made excellent growth and produced a good seed crop. Seed from this accession from Afghanistan will be available for distribution. No distribution in 1962.

1962 Grass Plantings - Beltsville, Maryland

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BN NO.	SPECIES	PI NO.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM	MATURE SIZW	SEED COLL.	SEED
11217	AELUROPUS repens	264357	USSR	C H P	F S 1/	F C		June	13-8x6	July Tacks at nodes	
11237-59	AGROPYRON elongatum	264770	Germany	C H P	F E	F D	C	July	47-22x11	Aug.	6 gm.
11187-59	ALOPECURUS pratensis	266007	Poland	C H P	F E	F B	C	May	14-4x5	June-died during summer	
11200-59	pratensis	266224	Poland	Very weak accession - died without bloom							
11348-60	pratensis	267938	Holland	C H P	F E	F B	C	May	33-9x9	Poor accession	
11530-59	pratensis	270395	USSR	C H P	F E	F B	C	May	27-8x8		
11531-59	pratensis	270396	USSR	C H P	MA E	MA B	C	May	27-8x9		
11712-60	pratensis	273280	Holland	C H P	MA E	MA D	C	May	34-10x9		
11713-60	pratensis	273281	Holland	C H P	MA E	MA D	C	May	31-10x10-variable in amt. of spread.		
11714-60	pratensis	273282	Holland	C H P	MA E	MA D	C	May	29-10x9		
11715-60	pratensis	273283	Holland	C H P	MA E	MA D	C	May	30-12x9		
11716-60	pratensis	273284	Holland	C H P	MA E	MA D	C	May	30-11x9		
11717-60	pratensis	273285	Holland	C H P	MA E	MA D	C	May	30-12x9		
11718-60	pratensis	273286	Holland	C H P	MA E	MA D	C	May	31-11x10		
11719-60	pratensis	273287	Holland	C H P	- Poor accession - Discarded						
11720-60	pratensis	273288	Holland	C H P	MA E	MA D	C	May	30-13x8 - Looks promising		
11721-60	pratensis	273289	Holland	C H P	F E	F B	C	May	32-6x6 - Poor accession		
11722-60	pratensis	273290	Holland	C H P	MA E	MA D	C	May	29-16x12 - Variation in color		
11723-60	pratensis	273291	Holland	C H P	MA E	MA D	C	May	28-12x13		
11724-60	pratensis	273292	Holland	- Poor accession - Discarded							
11725-60	pratensis	273293	Holland	C H P	MA E	MA D	C	May	30-10x9		

1/--Rhizomatous

1962 Grass Plantings - Beltsville, Maryland

				C-Cool W-Warm H-Hardy T-Tender P-Peren. A-Annual B-Bien.	*Stolon. A-Abund. MA-Mod." F-Few E-Erect S-Sub-" P-Pros.	A-Abund. MA-Mod." F-Few B-Basal C-Caul. D-Distr.	S-Self C-Cross A-Apom.	Date	Hd. Ht. x Ht.-Sprd.	*Green- house Period	Amt.
BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM	MATURE SIZE	SEED COLL.	SEED
	ALOPECURUS										
11726-60	pratensis	273294	Holland	C H P	MA E	MA D	C	May	35-16x6 - Plts variable in size		
11727-60	pratensis	273295	Holland	C H P	MA E	MA D	C	May	36-10x10		
11728-60	pratensis	273296	Holland	C H P	MA E	MA D	C	May	32-12x10		
11729-60	pratensis	273297	Holland	C H P	MA E	MA D	C	May	29-13x10		
11730-60	pratensis	273298	Holland	C H P	F E	F D	C	May	27-10x6 - Poor accession		
11731-60	pratensis	273299	Holland	Poor accession - Discarded							
11734-60	pratensis	273302	Holland	C H P	F E 1/	F D	C	May	30-10x8		
11735-60	pratensis	273303	Holland	C H P	F E 1/	F D	C	MAy	24-9x8		
11737-60	pratensis	273305	Holland	C H P	A E	MA D	C	May	28-12x11		
11738-60	pratensis	273306	Holland	C H P	MA E	MA D	C	May	32-10x11		
11739-60	pratensis	273307	Holland	C H P	A E	A D	C	May	28-16x14 - Good accession		
11740-60	pratensis	273308	Holland	C H P	MA E 1/	MA D	C	May	29-10x10		
11741-60	pratensis	273309	Holland	C H P	MA E	MA D	C	May	29-7x10		
11742-60	pratensis	273310	Holland	C H P	MA E	A D	C	May	32-12x15 -One of the best accessions		
11743-60	pratensis	273311	Holland	C H P	MA E	MA D	C	May	27-9x12 - Highly variable		
11744-60	pratensis	273312	Holland	C H P	MA E	MA D	C	May	31-14x10		
11745-60	pratensis	273313	Holland	C H P	MA E	MA D	C	May	30-14x11 - Variable as to leafiness		
11746-60	pratensis	273314	Holland - Weak accession - All dead.								
11747-60	pratensis	273315	Holland - Weak accession - All dead.								
11748-60	pratensis	273316	Holland - Poor accession - Discarded.								
11749-60	pratensis	273317	Holland - Poor accession - Discarded.								
11750-60	pratensis	273318	Holland - Poor accession - Discarded.								

1/ - Rhizomatous

1962 Grass Plantings - Beltsville, Maryland

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BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM	MATURE SIZE	SEED COLL.	SEED
	ALOPECURUS										
11751-60	pratensis	273319	Holland	C H P	F E	MA D	C	May	23-9x8		
11754-60	pratensis	273322	Holland	- Weak accession - All dead.							
11758-60	pratensis	273326	Holland	- Poor accession - Discarded.							
11761-60	pratensis	273329	Holland	- Poor accession - Discarded							
11762-60	pratensis	273330	Holland	- Weak accession - All dead.							
11763-60	pratensis	273331	Holland	- Weak accession - All dead.							
11764-60	pratensis	273332	Holland	- Weak accession - All dead.							
11765-60	pratensis	273333	Holland	- Poor accession - Discarded.							
11766-60	pratensis	273334	Holland	- Poor accession - Discarded.							
11767-60	pratensis	273335	Holland	- Weak accession - All dead.							
11775-60	pratensis	273343	Holland	- Weak accession - All dead.							
11776-60	pratensis	273344	Holland	- Weak accession - All dead.							
11784-60	pratensis	273352	Holland	- Poor accession - Discarded.							
11785-60	pratensis	273353	Holland	- Poor accession - Discarded.							
11786-60	pratensis	273354	Holland	- Poor accession - Discarded.							
11788-60	pratensis	273356	Holland	- Poor accession - Discarded.							
11793-60	pratensis	273361	Holland	- Weak accession - All dead.							
	AMPELODESMOS										
11410-60	mauritanicus	269843	Tunisia	T P	- Two yrs. old.				-15x8	- Never bloomed	
11411-60	mauritanicus	269844	Tunisia	T P	Two yrs. old.				-13x9	- Never bloomed	
	ANDROPOGON										
9703-60	gerardi	NY-1284	N.H.	W H P	MA E	MA C	C	July	60-39x17	- Height variable--4',5',6'	
9703-60	gerardi	NY-1668	N.H.	W H P	MA E	MA C	C	July	60-39x17	- Uniform in height	
11508-60	gerardi	NY-1667	N.H.	W H P	A E	A D	C	July	68-48x26	- Uniform. Better than NY-1284 or NY-1668	

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BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM	MATURE SIZE	SEED COLL.	SEED
	APLUDA										
11653-60	mutica	271556	India		A S	A C Var. in ht.		July	26-20x14	Sept.	10 gms
	ARISTIDA										
12031-58	uniplumis	276026	Africa		MA E	F D		July	30-20x16	Sept.	7 gms
	ARRHENATHERUM										
11433-60	sp.	268211	Iran	- No bloom - Died during summer.							
	BOTHRIOCHLOA										
11930-60	insculpta	275083	India	W T P	A P *	A C D	S ?	Dec.	38-38x16	Dec.*	
11476-60	ischaemum	268361	Afghan.	W H P	MA S	MA D	A	July	24-18x30	Aug.	-1 gm
11499-60	ischaemum	269364	Afghan.	W H P	MA S	MA D	A	July	30-22x30	Aug.	-1 gm
	BRACHYPODIUM										
11409-60	sylvaticum	269842	Tunisia	C H P	F S	F B (Sev. leaf rust)		June	18-8x10	July	25 gms
11442-60	sylvaticum	268222	Iran	C H P	F E	MA D (Some leaf dis.)		June	20-12x8	July	26 gms
	BROMUS										
11440-60	japonicus	268220	Iran	Weedy annual - accession of no value							35 gms
11441-60	japonicus	268221	Iran	Weedy annual - accession of no value							4 gms
11220-59	macranthos	264400	Argent.	C H P	MA E	F D (Leaf spot dis.)		May	12-6x6	June	2½ oz
11438-60	tomentellus	268218	Iran	C H P	F E	F D		May	32-8x7	June	12 gms
11439-60	sp.	268219	Iran	C H P	F E	F D		June	15-5x10	July	3 gms
	CENCHRUS										
11576-60	setigerus	271141	India	Weak accession - Died during summer							
11642-61	setigerus	271527	India		MA E	MA D	A	Jn/July	18-14x20	July/Aug.	1 #, 2 oz.
	CHLORIS										
12330-61	truncata	279931	Austral.	W P	F E	F D		Jn/July	13-8x9	July/Aug.	16 gms

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BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM	MATURE SIZE	SEED COLL.	SEED
	CHRYSOPOGON										
11477-60	gryllus	268375	Afghan.	W H P	F E	MA C			-27x23	- 2 yrs. old; never bloomed	
11583-60	montanus	271148	India	W H P	MA E	MA C			-29x32	- 2 yrs old; never bloomed	
11645-60	montanus	271530	India	W H P	F E	F D	C	Aug/Sept	36-12x10	Aug/Oct.	8 gms
11647-60	montanus	271532	India	W H P	A E	A C	C	Sept	36-24x24	Oct.	
	CYMBOPOGON										
11649-60	distans	271552	India	W H P	A E	A D (Good acc.)		Aug.	40-24x28	Sept.	25 gms
	DIGITARIA										
10622-58	smutsii	258439	Africa	W T P	MA E	MA D	C	July	52-26x18	Aug.	3 gms
10421-	sp.	256043	S.Rhod.		* A E	A C		Sept	36-16x54	Oct. - Very late acc.	
	ECHINOCHLOA										
7018-50	crusgalli	- -	S.Car.	W A	F E	F C		May/Aug	15-10x6	June/Sept(2 crops)	28 gms
	EHRHARTA										
11526-60	sp.	270494	S.Afr.	P - Died without bloom during second summer.							
	ELYMUS										
11518-60	dahuricus	269890	W.Pak.	C H P	MA E	A B (leaf,stem dis.)		June	36-12x18	July	$5\frac{1}{2}$ oz.
11519-60	sp.	269891	W.Pak.	C H P	F E	F D		June	40-24x12	July	6 oz.
	ELYONURUS										
11661-60	hirsutus	271566	India	P	F E	F C		Aug.	28-18x10	Sept.	-1 gm
	ERAGROSTIS										
12037-53	atherstonei	276033	S.Afr.		A E	MA D		July	38-28x24	Aug. (2nd crop in Oct.)	125 gms
	FESTUCA										
8758-58	alopecurus	238314	Morocco	C A	F E	F D		July	14-6x8	Aug.	
11238-59	arundinacea	265352	Holland	C H P	MA E	A D	C	June	34-16x18		

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BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM	MATURE SIZE	SEED COLL.	SEED
	FESTUCA										
11239-59	arundinacea	265353	Holland	C H P - Very weak; died during winter							
11240-59	arundinacea	265354	Holland	C H P	MA E	MA D	C	June	38-18x19		
11241-59	arundinacea	265355	Holland	C H P - Very weak; died during winter							
11242-59	arundinacea	265356	Holland	C H P	A E	A D	C	June	34-16x19		
11243-59	arundinacea	265357	Holland	C H P	MA E	MA D	C	June	27-18x17		
11244-59	arundinacea	265358	Holland	C H P	A E	A D	C	June	39-17x16		
11245-59	arundinacea	265359	Holland	C H P	MA E	MA D	C	June	36-16x17	Lacks vigor	
11246-59	arundinacea	265360	Holland	C H P	A E	A D	C	June	42-18x19	One of the best accessions	
11247-59	arundinacea	265361	Holland	C H P	MA E	MA D	C	June	37-17x16		
11248-59	arundinacea	265362	Holland	C H P	MA E	A D	C	June	34-17x18		
11249-59	arundinacea	265363	Holland	C H P	MA E	MA D	C	June	34-16x16		
11250-59	arundinacea	265364	Holland	C H P	F E	MA D	C	June	36-17x18		
11251-59	arundinacea	265365	Holland	C H P	MA E	MA D	C	June	32-15x16		
11252-59	arundinacea	265366	Holland	C H P	A E	MA D	C	June	36-17x18		
11253-59	arundinacea	265367	Holland	C H P	F E	MA D	C	June	32-17x18		
11417-60	arundinacea	269850	Tunisia	C H P	F E	MA D	C	June	30-12x12	Ident. questioned; lacks rhizomes	
11500-60	arundinacea	269373	Afghan.	C H P	- Very weak; died during winter						
10509-58	ovina	257740	Hungary	C H P	MA E	A B	C	May	14-6x8	June	8 gms
12118-61	pallescens	269647	Argent.	- Died during early summer without bloom							
7313-53	rubra"Reptans'	189285	Finlnd.	C H P	MA E	A D	C	May	24-10x7	June good color	15 g
11107-59	" 'Golfrood'	266207	Holland	C H P	F E	A D	C	May	18-10x11	June - no fill	
11108-59	" 'Sioux'	266208	Holland	C H P	MA E	A D	C	May	27-14x10	June	15 gms
11535-60	rubra	270400	Russia	- Plants two years old. Never bloomed. Very weak							
12010-61	rubra	-	Penna.	C H P	F E	MA B	C	June	16-5x6	July possibly 1 clone.	

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BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM	MATURE SIZE	SEED COLL.	SEED
	FESTUCA										
11233-59	rubra var. littoralis	264422	Germany	C H P	F E	MA D	C	July	15-7x8		
11511-60	rubra var. littoralis	269839	Germany	C H P	A E (Variable in color)	A D	C	May	14-10x12	June (vigorous)	3 gms
11448-60	sp.	268234	Iran	C H P	F E	F B		May	24-8x9	June	2 gms
11449-60	sp.	268235	Iran	C H P	MA E	A D (good acc.)		June	24-14x18	July	31 gms
	HORDEUM										
11507-60	bogdanii	269406	Afghan.	C H P	F E	F D (poor acc.)		June	24-12x8	June (disease)	13 gms
11916-60	bulbosum	274910	Turkey	C H P	A E	A B	C	May	32-18x10	June (vigorous)	3½ oz
12119-61	comosum	269648	Argent.	- Died during summer without bloom.							
	HYPARRHENIA										
11896-60	cymbaria	273927	Ethiop.		A S	A D		none	-36x48	- Good forage plant	
11528-60	hirta	270496	S.Afr.		MA E	MA D		Aug.	72-52x20	Sept	20 gms
11897-60	hirta	273928	Ethiop.		MA E	A D		none	-60x24		
11898-60	sp.	273929	Ethiop.		MA E	A D		none	-72x32		
11899-60	sp.	273930	Ethiop.		MA E	MA D (Var. in ht.)		Aug.	60-37x26	Sept. (some plts 96")	12 gms
11900-60	sp.	273931	Ethiop.		MA E	MA D		none	-96x24		
11901-60	sp.	273932	Ethiop.		F E	MA D		none	-56x34		
11902-60	sp.	273933	Ethiop.		MA E	MA D		none	-36x24		
11903-60	sp.	273934	Ethiop.		MA E	MA D		none	-72x36		
	LEPTOCHLOA										
8249-52	monostachya	207633	India	W T P	MA S	F C		Jan--May	20-10x13	Jan.--May*	

1962 Grass Plantings - Beltsville, Maryland

				C-Cool W-Warm H-Hardy T-Tender P-Peren. A-Annual B-Bienn.	*Stolon. A-Abund. MA-Mod." F-Few E-Erect S-Sub-" P-Pros.	A-Abund. MA-Mod." F-Few B-Basal C-Caul. D-Distr.	S-Self C=Cross A-Apom.	Date	Hd. Ht. x Ht.-Sprd.	*Green- house Period	Amt.
BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM	MATURE SIZE	SEED COLL.	SEED
	LOLIUM										
11890-60	multiflorum	274638	Poland	C H P	MA E	A D	C	May	17-12x19	June	82 gms
12006-60	perenne	274638	Austral.	C H P	A E	A D	C	May	24-14x10	June	188 gms
	'Kangaroo Valley' (Appears promising)										
	ORYZOPSIS										
11663-60	aequiglumis	271586	India		F E	F D		Aug.	28-18x6	Sept.	-1gm
11479-60	sp.	268409	Afghan.	- All died during early summer.							
	PANICUM										
11480-60	antidotale	268410	Afghan.	W H P	MA E	MA D	S	June	50-40x24	July	8 gms
11503-60	antidotale	269390	Afghan.	W H P	MA E	MA D	S	June	54-36x18	July	2 gms
11666-60	antidotale	271589	India	W H P	MA E	F D	S	June	66-52x20	July	25 gms
12322-59	coloratum	-	LosLunas		MA E	MA D	C	July	30-30x32	Aug.	75 gms
10543-58	delicatum	257774	N.Aust.	W T P	F S	MA B		Oct.-Nov.	24-9x10	Nov.*	2 gms
4109-58	maximum	153669	S.Afr.		A E	A D	A	July	62-38x30	Aug.	32 gms
4277-58	maximum	156075	S.Afr.		A E	A D	A	July	52-32x45	Aug.	73 gms
4280-58	maximum	156078	S.Afr.		A E	A D	A	July	72-48x34	Aug. (exc. vigor)	44 gms
7274-58	maximum	196366	SWAfr.		A E	A D	A	July	66-48x32	Aug.	40 gms
12243-55	maximum	208996	S.Afr.		A E	A D	C	July	49-30x29	Aug. (good leafy acc.)	13 gms
9149-57	virgatum	NDG-965	N.Dak.	W H P	MA E	MA D	C	July	38-18x15	Not promising at Beltsville.	
11357-60	virgatum v. cubense	SC-58-21	N.Car.	W H P	MA E	MA D	C	July	30-20x20	Aug.	17 gms

1962 Grass Plantings - Beltsville, Maryland

				C-Cool W-Warm H-Hardy T-Tender P-Peren. A-Annual B-Bienn.	*Stolon A-Abund. MA-Mod." F-Few E-Erect S-Sub-" P-Pros.	A-Abund MA-Mod." F-Few B-Basal C-Caul D-Distr.	S-Self C-Cross A-Apom.		Hd. Ht. x Ht.-Sprd.	*Green- house Period	
BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM	MATURE SIZE	SEED COLL.	SEED
	PASPALUM										
11553-60	notatum 'Underwood"	NC-59-31	Tenn.	W H P	MA E	A D	A	July/Aug	23-11x24	Sept./Oct.	47 gms
11554-60	notatum	NC-59-26	N.Car.	W H P	MA E	A D	A	July/Aug	23-10x28	Sept./Oct.	42 gms
	(most aggressive at Beltsville)										
11573-60	notatum	-	BN sel.	W H P	MA E	A D	A	July/Aug	18-5x26	Sept./Oct.	200 gms
	(cold hardy selection out of 'Wilmington')										
	PENNISETUM										
11381-60	alopecuros	269235	India	P	A E	A D (lvs. very harsh)		Mar.	42-32x24	Apr*	3 gms
11810-60	ciliare	273256	S.Afr.	W T P	MA E	MA D	A	July/Aug	41-26x23	Aug./Sept.	14 gms
					Good tillering habit						
11905-60	ciliare	274082	S.Afr.	W T P	MA E 1/	MA D	A	"	36-26x20	"	8½ oz.
							Good seeding habit				
11949-60	ciliare	275102	India	W T P	A E	A D	A	July	45-36x40	Aug. (some plts. rhizom.)	4½ oz.
11811-60	macrourum	273257	S.Afr.		MA E	MA C (poor seeder)		Aug.	58-42x18	Sept.	1 oz.
13577-60	sp. (Aggressive, with good tillers)	-	India	W T P	MA E	MA C		July	28-20x20	Aug.	1½ oz.
	PHALARIS										
11256-59	aquatica	266227	Portu.	C H P	F E	F D	C	June	30-12x10	July	-1 gm
11257-59	aquatica	266228	Morocco	C H P	MA E	MA D	C	June	48-20x18	July	3 gms
11261-59	aquatica	249836	Greece	C H P	A E	A D	C	July	42-23x14	July	-
11262-59	aquatica	249837	Greece	C H P	MA E	A D	C	July	52-25x18	July	-1 gm
11269-59	aquatica	207961	Africa	C H P	MA E	MA D	C	June	42-15x14	July	5 gms
11270-59	aquatica	207968	Africa	C H P	MA E	MA D	C	July	43-24x14	July	7 gms
11349-59	aquatica	240249	Algeria	C H P	F E	F D	C	July	44-21x14	July	2 gms

1/--Rhizomatous

BN No.	SPECIES	PI No.	ORIGIN	HABIT C-Cool W-Warm H-Hardy T-Tender P-Peren. A-Annual B-Bienn.	STEMS *Stolon. A-Abund. MA-Mod." F-Few E-Erect S-Sub-" P-Pros.	LEAVES A-Abund. MA-Mod." F-Few B-Basal C-Caul. D-Distr.	POLLIN. S-Self C-Cross A-Apom.	BLOOM Date	MATURE SIZE Hd. Ht. x Ht.-Sprd	SEED COLL. *Green-house Period	SEED Amt.
	PHALARIS										
11271-59	aquatica X arundinacea	217441	Italy	C H P	MA E	A D	C	July	47-26x18	July	7 gms
11275-59	aquatica X arundinacea	206710	Turkey	C H P	F E	MA D	C	July	29-13x12	July	6 gms
9176-57	arundinacea	P-2369-254	Cal.	C H P	MA E	MA D	C	June	48-27x23		
10212-58	arundinacea	FC-35202	For.Cr.	C H P	F E	MA D	C	June	49-28x15		
10213-58	arundinacea	FC-33744	For.Cr.	C H P	A E	A D	C	June	49-32x21 - 'Ottawa Syn. #2'		
10214-58	arundinacea	FC-33964	For.Cr.	C H P	A E	A D	C	June	36-34x32 - 'San Joaquin 2178'		
11264-59	arundinacea	251842	Austria	C H P	MA E	MA D	C	June	22-18x18		
11265-59	arundinacea	253315	Yugosl.	C H P	MA E	F D	C	June	49-42x17		
11267-59	arundinacea	253317	Yugosl.	- Died during winter							
11268-59	arundinacea	255887	Poland	C H P	MA E	A D	C	June	45-39x28		
11702-59	arundinacea	272122	Poland	C H P	'Motycka' - Very weak. Has made little growth in two years.						
11703-59	arundinacea	272123	Poland	C H P	'Nakielska' - Very weak. Has made little growth in two years.						
11425-60	truncata	269858	Tunisia	C H P	F E	F D		June	44-23x13	Aug.	-1 gm.
	PHLEUM										
11640-60	pratense	270543	India	C H P	MA E	A D	C	June	26-15x12	July	2 gms
11891-	pratense	274643	Poland	C H P	MA E	A D	C	July	32-14x9	Aug.	22 gms
	PLAGIOCHLOA										
11906-60	uniola	274083	S.Afr.	- Weak accession. All died during summer.							
	PLETRACHNE										
10555-58	bynoei	257786	Austral.	W T P	MA S	MA C		Oct.	10-10x24	Nov.*	-1 gm

1962 Grass Plantings - Beltsville, Maryland

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N No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM	MATURE SIZE	SEED COLL.	SEED
	POA										
11483-60	australis	268416	Afghan.	C H P	MA E 1/	MA B	(confined by cultivator)	May	24-8x16	June	8 gms.
11482-60	bulbosa	268415	Afghan.	C H P	F E	F B	(weak acc.)	May	14-3x4	June	20 gms
9319-54	glaucantha	109350	Turkey	C H P	MA E	F D		June	22-8x14	June	3 gms
11226-59	lanuginosa	264406	Argent.	C H P	F E 1/	F B		May	15-7x12	July	-1 gm
11109-59	pratensis ' 'Prato'	266209	Holland	C H P	A E 1/	A D	(good acc.)	May	17-11x16	June	4 gms.
11505-60	pratensis	269392	Afghan.	C H P	A E 1/	A D	(excellent appearance and vigor)	May	25-14x28	June	48 gms
	RHYNCHELYTRUM										
8081-56	roseum	201889	Israel	W T P	A S	A D	(tacks at nodes)	June	32-22x32	Aug.	7 gms
9133-57	roseum	-	Florida	W T P	A S	A D	" " "	June	42-32x26	Aug. (good forage plt.)	20 gms
	SECALE										
11918-60	montanum	274912	Turkey	C H P	MA E	F D	(Aggressive)	June	42-10x9	July(good seeder)	-3 oz.
	SETARIA										
12370-62	sphacelata	282707	China	(very aggressive)	A E	E C	C	Nov./Dec.	72-65x20	Jan.*	-1gm
	SCHIZACHYRIUM										
10569-58	pachyarthon	257800	N.Austral.		F E	F B	Died		-6x4	Poor performance	
	THAUMASTOCHLOA										
10573-58	pubescens	257804	N.Austral.	W T A	F S	F C		Nov.	6-6x12	Dec.*	-1gm
	THEMEDA										
11650-60	anathera	271553	India	W H P	A E	A D	(plts 2 yrs old)	Nov.	-38x36	Jan*	1 gm

1/

1962 Plantings - Legumes and Other - Beltsville, Maryland

BN No.	SPECIES	PI No.	ORIGIN	HABIT C-Cool W-Warm H-Hardy T-Tender P-Peren. A-Annual B-Bienn.	STEMS *Stolon. A-Abund. MA-Mod." F-Few E-Erect S-Sub-" P-Pros.	LEAVES A-Abund. MA-Mod." F-Few B-Basal C-Caul. D-Distr.	POLLIN. S-Self C-Cross	BLOOM Date	MATURE SIZE Ht--Sprd.	SEED COLL. *Green-house Period	SEED Amt.
	ALYSICARPUS										
13640-61	rugosus	286530	India		MA E	MA D		June/Aug	12x8	July/Sept.	20 gms
	ANTOPETITIA										
7133-50	abyssinica	193736	E.Africa	W A	MA P	F D		June	2x18	July	6 gms
	CENTROSEMA										
11566-60	virginianum	NC-60-5	Tenn.		F	MA D		none	6x25	Lacks vigor	
	CROTALARIA										
5832-48	guatamalensis	-	Guat. - Died during early summer without bloom.								
5216-47	incana	166404	Argent.	" " "	"	"	"				
5336-47	maxillaris	168572	Austral	" " "	"	"	"				
5337-47	maxillaris	168573	Austral	" " "	"	"	"				
6307-48	mucronata	186304	Austral	" " "	"	"	"				
5339-46	usaramoensis	168575	Java	Died during early summer without bloom							
6942-49	sp.	192956	Kenya	W T	F E	F D			12x6 - Very weak; never bloomed		
7542-50	sp.	192957	Ethiop	F E	F D				7x4 - Died without bloom		
11958-60	sp.	275317	W.Pak.	Died during early summer without bloom							
11959-60	sp.	275318	India	W T	F E	F D		May	3x1	June	7 seed
11960-60	sp.	275319	India	W T	F E	F D		May	3x1	June	11 seed
11961-60	sp.	275320	India	Died during early summer without bloom							
11962-60	sp.	275321	India	W T P	F S	F D		Apr.	5x8	May	1 gm.
	DESMODIUM										
4753-40	batocaulon	A-9312	Ariz.	W A	A S	A D		Aug	15x38	Oct.	2 gm
5088-47	discolor	164252	Brazil	W T P	F E	MA D	never bloomed		30x24		
6651-48	distortum	188559	Guate.	W T P	A P	A D	never bloomed		5x45		
5834-49	intortum	-	Guate.	W T	MA P	MA D	never bloomed		10x48		
6650-49	intortum	188558	Guate.	W T	MA P	MA D	never bloomed		12x48		

1962 Plantings - Legumes and Other - Beltsville, Maryland

				C-Cool W-Warm H-Hardy T-Tender P-Peren. A-Annual B-Bienn.	*Stolon. A-Abund. MA-Mod." F-Few E-Erect S-Sub-" P-Pros.	A-Abund. MA-Mod." F-Few B-Basal C-Caul. D-Distr.	S-Self C-Cross			*Green- house Period	
BN No.	SPECIES	PI No.	ORIGIN	HABIT	STEMS	LEAVES	POLLIN.	BLOOM	MATURE SIZE	SEED COLL.	SEED
	DESMODIUM										
5345-45	purpureum	168581	Brazil	W T P	F E	MA D		July	42x36	Aug.	47 gms
5346-46	purpureum	168582	Java	W T	F E	F D		July	48x30	Aug.	68 gms
4164-45	rensonii	PQ-091960	C.Amer.	W T	F E	F D			40x15 - never bloomed		
4519-47	tortuosum	-	Okla.	W P	F E	F D		never bloomed	16x18 - deer browse damage		
6314-49	varians	186311	Austral	W P	MA S	F D		July	8x12	Aug.	6 gms
4766-46	sp.	-	Kans.		F E	F D		never bloomed	14x8 - deer browse damage		
5835-48	sp.	-	Guate.		F E	F D		never bloomed	22x22 - deer browse damage		
6117-48	sp.	-	Guate.		F E	MA D		never bloomed	22x24 - deer browse damage		
6119-48	sp.	-	Guate		MA P	A D		never bloomed	4x48 - tacked at nodes		
6391-49	sp.	-	India		F E	MA D		never bloomed	6x16 - dead by September		
	ENCHYLAENA										
12289-62	tomentosa	279185	Austral		A E	A D (browse plt.)		Sept.	20x36	Oct.	105 gms
	EXOMIS										
11527-60	axyrioides	270495	S.Afr.	W T P	MA E	MA D		July	18x23	Oct.	-1 gm
	HEDYSARUM										
5657-48	coronarium	173372	Uruguay		F P	F D		May	3x24	June	1 gm
	INDIGOFERA										
7743-51	arrecta	199342	E.Afr.		F E	A D		Aug/Sept	10x10	Sept/Oct	15 gms
7745-56	arrecta	199344	Kenya		F E	A D		Aug/Sept	9x8	Sept/Oct	7 gms
6826-49	cordifolia	189495	India		MA P	MA D		Oct.	3x9	Dec*	-1 gm
6499-49	endecaphylla	185532	SW Afr		A P	A D		July	3x36	Oct.	2 gm
6497-51	flavicans	185531	S Afr.		Died during early summer without bloom.						
6827-49	glandulosa	189496	India		F E	A D		July	8x13	Oct.	-1 gm
11567-60	kirilowii	269731	Korea	W H P	MA E	A D		June	24x18	Did not set seed	

1962 Plantings - Legumes and Other - Beltsville, Maryland

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	INDIGOFERA										
7394-50	parodiana	197553	Argent.		MA P	A D		July	2x16	Aug/Sept	82 gms
6500-49	practicola	185533	SW Afr		MA P	A D		July	5x18	Oct	7 gms
6498-49	rautenenii		SW Afr					Sept	9x9	Oct	-1 gm
6702-49	suffruticosa	188885	Hondur		F E	MA D		July	31x30	Sept	13 gms
	LATHYRUS										
13637-61	aphaca	286527	Afghan		A	A D		May	24x11	June	35 gms
13638-61	aphaca	286528	Afghan		A P	A D		May	2x20	June*	5 gms
13641-61	sativus	286531	Pakis.		F	MA D		Apr.	20x15	May*	67 gms
	LESPEDEZA										
12307-61	capitata	NY-1862	Mass.	W H P	F E	F D		Sept	18x4	Oct.	20 gms
10772-58	cuneata	259459	Japan	W H P	MA E	MA D		Sept	30x18	Oct.	252 gms
10773-58	cuneata	259460	Japan	W H P	MA E	MA D		Sept	34x20	Oct	56 gms
10849-59	cuneata	-	Japan	W H P	MA P	MA D		Sept	6x20	Oct	262 gms
10410-	striata	-	Japan	W A	A E	A D	(a good annual lespedeza)	Sept	10x18	Nov	133 gms
	MEDICAGO										
13644-61	polymorpha var. vulgaris	286534	Ethiop		A P	A D		Feb/Nov	2x30	Apr*	19 gms
9291-58	lupulina	263243	Afghan	C H P	MA P	MA D		June	4x28	July	36 gms
11478-60	sativa	268408	Afghan	C H P	MA E	MA D		June	20x18	July	5 gms
11497-60	sativa	269168	Spain	C H P	F E	F D		June	22x14	July	-1 gm
	ONOBRYCHIS										
10252-58	gaubae	211055	Afghan	- After two years plants were discarded. Diseased & weak.							
	PHASEOLUS										
12321-59	mungo	279475	Angola		MA E	MA D		July/Aug	15x10	Aug/Sept	3 gms

1962 Plantings - Legumes and Other - Beltsville, Maryland

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	SCORPIURUS										
-	sulcata	H-1945-B	Ethiop		F P	F C		Mar/Apr	3x18	Apr/May*	12 gms
	TRIFOLIUM										
10576-58	hybridum var. pratense	257807	Italy		MA S	MA D		July	10x10	Aug.	1 gm
10206-58	incarnatum	255393	Yugo.		A S	A D	C	Feb/Mar	11x30	Mar/Apr*	1 gm
10207-58	montanum	255394	Yugo	C H P	F E	MA D		May	12x10	June	1 gm
11465-60	purseglovei	268340	B.Congo		A P	A D			4x50 -	Died - virus infection	
11466-60	purseglovei	268341	BCongo		A P	A D			3x48	Died - virus infection	
11467-60	purseglovei	268341	B.Congo		A P	A D			4x38	Died - virus infection	
11468-60	purseglovei	268342	B.Congo		A P	A D			4x36	Died - virus infection	
11558-60	repens	251432	Yugo.	C H P	F E	F D (lacks vigor)		May/July	4x48	June/Aug	5 gms
11469-60	usambarense	268344	B.Congo		A P	MA D		Apr.	5x34	May	-1 gm
11470-60	usambarense	268345	B.Congo		A P	A D		Mar.	4x76	Did not set seed	
11471-60	usambarense	268356	B.Congo		A P	A D		Mar.	4x24	Did not set seed	
11472-60	usambarense	268357	B.Congo		A P	A D		Mar.	3x60	Did not set seed	
11473-60	usambarense	268357	B.Congo		A P	A D		Mar.	4x60	Did not set seed	
11474-60	usambarense	268358	B.Congo		A P	A D		Mar.	3x40	Did not set seed	
10946-60	vesiculosum		Turkey	C H P	F P	F D	S	May	3x12	June	4 gms
	TRIGONELLA										
13642-61	foenum-graecum	286532	India		MA E	A D	S	Mar.	16x14	Apr*	25 gms
13643-61	foenum-graecum	286533	India		F E	F D	S	Mar	9x20	Apr*	7 gms
	VICIA										
8943-56	americana	241081	Mont.		F E 1/	MA D			4x24	Over wintered. early spring.	Dead
13639-61	villosa	286529	Afghan.		MA	MA D		Apr	40x16	June*	123 gms

1/ - Rhizomatous

Test for Winter Hardiness - *Lathyrus* spp.

Beltsville, Md.

BN No.	SPECIES	PI No.	ORIGIN	EMERGENCE	SEEDLING VIGOR	WINTER INJURY	MATURED SEED
8560-56	japonicus		Maine	Fair	Medium	*All killed	No
6038-49	latifolius v. splendens		Colorado	Fair	Medium	50% killed	Yes
5740-57	nissolia	175004	Uruguay	Fair	Medium	90% killed	Yes
5938-48	ornatus incanus	A-10759	New Mexico	Fair	Medium	All killed	No
7429-50	pubescens	197856	Argentina	Poor	Medium	*All killed	No
4555-48	stipulaceus v. incanus		Nebraska	Poor	Weak	*80% killed	No
2753-57	sylvestris	P-7055	Pullman PMC	Fair	Medium	*90% killed	No
6979-50	sylvestris	M_2-10920	Iowa	Fair	Medium	All heaved	No
7017-50	tingitanus		S.Carolina	Poor	Medium	*All killed	No
8472-53	tuberosus	A-13180	Siberia	Poor	Medium	*All killed	No
9040-57	tuberosus	M_2-11526	Missouri	Fair	Medium	*All killed	No

All seed was scarified and planted Sept. 12, 1961.

* - Indicates degree of winter injury may have been influenced by delayed germination.

Test for Winter Hardiness - *Vicia* spp.

Beltsville, Md.

BN No.	SPECIES	PI No.	ORIGIN	EMERGENCE	SEEDLING VIGOR	WINTER INJURY	MATURED SEED
4658-47	americana	KL-172	N. Dakota	Poor	Weak	Diseased. Insect injury.	No
4551-47	americana v. linearis		S. Dakota	Good	Medium	Diseased	No
4659-47	americana v. linearis	NDO-2-47	N. Dakota	Fair	Medium	Diseased	No
4694-47	americana v. linearis	KL-147	PMC, Kans.	Good	Medium	75% heaved	No
5711-48	americana v. linearis	KL-106	Oklahoma	Good	Medium	Diseased	No
6026-49	americana v. linearis		N. Dakota	Good	Medium	All heaved	No
7445-59	andicola	197872	Argentina	Good	Strong	None	Yes
4159-49	angustifolia		Texas	Poor	Strong	Heaved	No
4562-48	angustifolia		Vol. plts.	Good	Strong	60% killed	Yes
9371-59	angustifolia	FC-23994	N.E. PI Sta.	Good	Strong	None	Yes
8824-58	angustifolia v. segetalis	238382	Bulgaria	Good	Strong	All heaved	No
8825-59	angustifolia v. segetalis	238383	France	Good	Strong	All heaved	No
8817-58	cornigera	283375	Bulgaria	Good	Strong	All killed	No
6134-58	cracca	234266	PMC NewYork	Good	Strong	90% heaved	No
6990-50	cracca	M_2-11263	Iowa	Poor	Medium	All killed	No
7553-51	cracca	198260	Canada	Good	Strong	None	No
5406-49	dasycarpa	168642	Australia	Poor	Weak	All killed	No
11492-60	ervilia	268476	Afghan.	Good	Strong	25% killed	Yes
7446-58	graminea	197873	Argentina	Good	Weak	All killed	No

1962
Grass Seed Renewals
Beltsville, Maryland

BN No.	NAME	PI No.	ORIGIN	Amount
	AGROPYRON			
10788-59	intermedium	261098	Spain	47 gms
10169-58	littorale	255355	Yugoslavia	17 gms
10789-59	obtusiusculum	261099	Spain	38 gms
	ANDROPOGON			
9703-59	gerardi	NY-1284	New Hampshire	38 gms
4493-	hallii	KG-1156-46	SCN, Manhattan,Kans	10 gms
	ARRHENATHERUM			
6129-59	elatius	M1-4523	PMC, Elsberry, Mo.	12 gms
9741-57	elatius	186791	Wyoming	32 gms
6284-57	thorei	186281	Portugal	3 gms
	BOTHRIOCHLOA			
4419-	ischaemum		China	8 gms
5465-	ischaemum	171397	Italy	3 gms
	BRACHIARIA			
3977-58	erucaeformis	151838	Tanganyika	16 gms
	BRACHYPODIUM			
10449-58	phoenicoides	257680	France	18 gms
6210-49	pinnatum	185135	Iraq	11 gms
8945-56	pinnatum	206682	Turkey	6 gms
9836-58	pinnatum	253298	Yugoslavia	11 gms
8277-57	sylvaticum	206546	Greece	8 gms
	BROMUS			
8946-56	arvensis	206551	Greece	42 gms
8932-59	barcensis	233931	Canada	3 gms
9840-58	erectus	253300	Yugoslavia	32 gms
9919-57	inermis	232218	Utah	20 gms
11443-60	macrostachys	268223	Iran	14 gms
8939-59	marginatus	241047	Oregon	35 gms
4426-53	willdenowii	158372	New Zealand	10 oz.
10871-60	willdenowii X stamineus	-	California	6 oz.
	CHLORIS			
8703-58	acicularis	238258	Australia	3 gms
8002-57	cucullata	-	Spain	35 gms
8112-56	gayanna	202502	Morocco	49 gms
8130-56	gayanna	203519	So. Rhodesia	11 gms
7785-56	myriostachya	200213	Kenya	107 gms
8705-58	pectinata	238260	Australia	33 gms
7691-56	pycnothrix	199955	Ethiopia	4 gms
8706-58	scariosa	233262	Australia	3 gms
	CHRYSOPOGON			
6219-49	gryllus	185145	Iraq	5 gms
9751-58	gryllus	251975	Turkey	6 gms
9942-58	gryllus	254885	Iraq	14 gms

1962
Grass Seed Renewals
Beltsville, Maryland

BN No.	NAME	PI No.	ORIGIN	Amount
	CHRYSOPOGON			
9944-58	gryllus	254887	Iraq	15 gms
6218-49	montanus	185144	Turkey	6 gms
	DACTYLIS			
6604-55	glomerata	173696	Turkey	4 gms
6614-55	glomerata	180831	Turkey	7 gms
6311-57	voronovii	186308	Sweden	4 gms
	DICANTHIUM			
7659-58	annulatum	199240	Pakistan	6 gms
	DIGITARIA			
8730-58	brownei	238286	Australia	8 gms
8732-58	iburua	238288	Australia	40 gms
7254-57	pentzii	196346	So. Africa	17 gms
7260-57	pentzii	196352	So. Africa	11 gms
8141-56	pentzii	203344	So. Africa	2 gms
	ECHINOCHLOA			
8637-57	crus-pavonis	237129	Argentina	19 gms
	ELYMUS			
8948-56	dahuricus	221900	Afghanistan	11 gms
6641-50	virginicus v. glabriflorus		Maryland	9 oz.
	ENNEAPOGON			
10491-58	gracilis	257722	Australia	6 gms
	ERAGROSTIS			
9310-58	brownei	-	Australia	3 gms
4189-53	chloromelas	155434	So. Africa	18 gms
7587-57	curvula	198585	So. Africa	95 gms
8097-58	curvula	202421	So. Africa	75 gms
9327-58	curvula v. conferta		So. Africa	30 gms
6126-57	echinochloides	184741	So. Africa	25 gms
6864-58	echinochloides	190315	So. Africa	18 gms
6866-57	porosa	190317	So. Africa	10 gms
7573-57	porosa	198582	So. Africa	11 gms
8149-56	sarmentosa	203352	So. Africa	10 gms
4661-57	superba		Tanganyika	45 gms
6480-57	superba	185515	S.W. Africa	60 gms
6481-57	superba	185516	S.W. Africa	4 gms
6482-57	superba	185517	S.W. Africa	22 gms
8203	superba	203802	So. Africa	105 gms
8749-58	tremula	238305	Nigeria	58 gms
	FESTUCA			
4965-	elatior	163463	Finland	2 gms
6754-	ovina	189146	Holland	16 gms
6718-	rubra 'Viking'	237802	Sweden	7 gms
4427-53	rubra v. commutata	158376	New Zealand	25 gms

1962
Grass Seed Renewals
Beltsville, Maryland

BN No.	NAME	PI No.	ORIGIN	Amount
	HORDEUM			
10043-60	bulbosum	204579	Turkey	44 gms
10044-58	bulbosum	205195	Turkey	15 gms
9978-59	murinum	255142	Chile	5 gms
	HYPARRHENIA			
5210-57	hirta	166377	So. Africa	3 gms
6868-57	hirta	190319	So. Africa	1 gm
7685-58	hirta	199943	Ethiopia	2 gms
8763-58	hirta	238319	Holland	2 gms
11418-61	hirta	269851	Tunisia	3 gms
11235-59	lintonii	264545	So. Africa	2 gms
	LOLIUM			
6677-57	multiflorum	188732	Netherlands	69 gms
6629-58	perenne	174259	Turkey	28 gms
7376-57	subulatum	197310	Argentina	117 gms
	ORYZOPSIS			
7486-58	miliacea	198091	Morocco	15 gms
8443-55	miliacea	230621	Italy	1 gm
	PANICUM			
2258-59	amarulum		Virginia	1 #, 1 oz
5932-57	antidotale	181851	India	113 gms
8454-55	clandestinum	NY-799	New York	12 gms
9988-	clandestinum	NY-1246	Connecticut	165 gms
6517-58	coloratum	185550	S.W. Africa	75 gms
6736-51	coloratum	188932	PMC Tucson, Ariz.	46 gms
7269-58	coloratum	196361	So. Africa	55 gms
7270-58	coloratum	196362	So. Africa	78 gms
7271-58	coloratum	196363	So. Africa	13 gms
9805-	coloratum	253246	So. Africa O.P.	2 gms
9806-58	coloratum	253247	So. Africa	6 gms
9815-61	coloratum	253256	So. Africa	18 gms
8786-56+58	cymbiforme	238344	Australia	7 gms
6525-57	lanipes	185560	S.W. Africa	145 gms
8131-53	makarikariense	203520	So. Rhodesia	20 gms
10544-58	queenslandicum	257775	Australia	18 gms
5814-51	stapfianum	178257	So. Africa	13 gms
6390-59	stapfianum	145794	So. Africa	8 gms
6514-57	stapfianum	185547	So. Africa O.P.	8 gms
6876-53	stapfianum	190327	So. Africa	4 gms
9009-57	virgatum	-	New Jersey	220 gms
9011-57	virgatum	-	New Jersey	12½ oz.
10996-59	virgatum v. cubense (blend)	PM-59-13	No. Carolina O.P.	116 gms
10997-59	virgatum v. cubense (blend)	PM-59-14	No. Carolina	
8788-58	sp.	238346	Belgian Congo	6 gms

1962
Grass Seed Renewals
Beltsville, Maryland

BN No.	NAME	PI No.	ORIGIN	Amount
	PASPALUM			
9002-57	floridanum v. glabratum		Virginia	10 oz.
8057-56	tenellum		Spain	2 gms
	PENNISETUM			
339--	alopecuroides		Nebraska	2½ oz.
4870-56	ciliare	161631	So. Africa	6½ oz.
4872-56	ciliare	161633	So. Africa	7½ oz.
4873-56	ciliare	161634	So. Africa	3 oz.
4876-56	ciliare	161637	So. Africa	11 oz.
5180-57	ciliare	165749	So. Africa	9 oz.
5509-57	ciliare	171944	So. Africa	1½ oz.
6152-57	ciliare	184779	So. Rhodesia	8½ oz.
6401-58	ciliare	-	So. Africa	1 oz.
6528-57	ciliare	185561	So. Africa	9 oz.
6531-58	ciliare	185564	S.W.Africa	13 oz.
6532-57	ciliare	185565	So. Africa	7 oz.
7505-57	ciliare	197443	Ethiopia	5 oz.
7700-56	ciliare	199975	Ethiopia	6 oz.
8159-57	ciliare	203362	So. Africa	3 oz.
8161-56	ciliare	203364	So. Africa	1/2 oz.
8163-57	ciliare	203366	So. Africa	8 oz.
8269-56	ciliare	209101	Australia	9½ oz.
8290-56	ciliare	210693	So. Rhodesia	8 oz.
8291-56	ciliare	210694	So. Rhodesia	2½ oz.
9014-58	quartinianum	-	Ethiopia	44 gms.
7689-58	sp.	199953	Ethiopia	11 gms.
	PHALARIS			
10872-58	aquatica		Iraq	5 gms
10873-58	aquatica		Iraq	5 gms
9740-57	aquatica X arundinacea	207959	So. Africa	6 gms
10379-58	aquatica X arundinacea	256956	Argentina	7 gms
9688-58	arundinacea	234780	Germany	3 gms
8981-55+58	canariensis	223396	Iran	2 gms
6230-57	paradoxa v. praemorsa	185161	Iraq	7 gms
7315-57	paradoxa v. praemorsa	196873	Ethiopia	5 gms
	SESLARIA			
9981-58	elongata	253719	Yugoslavia	2 gms
	SETARIA			
7451-57	italica	197276	India	38 gms
7851-58	italica	196293	India	52 gms
8285-57	italica	209909	So. Africa	46 gms
5120-58	sphacelata	165718	Kenya	20 gms
6417-57	sphacelata	-	Kenya	5 gms

1962
Grass Seed Renewals
Beltsville, Maryland

BN No.	NAME	PI No.	ORIGIN	Amount
	SETARIA			
6882-58	sphacelata	190333	So. Africa	52 gms
7279-57	sphacelata	196371	So. Africa	4 gms
8652-57	sphacelata	237555	So. Africa	10 gms
9272-57	sphacelata	247411	Belgian Congo	2 gms
9339-58	sphacelata	-	So. Africa	158 gms
	SORGHUM			
8798-56	laxiflorum	238356	Australia	4 gms
	SPOROBOLUS			
6740-57	capensis	188936	So. Africa	59 gms
6542-57	fimbriatus	185576	So. Africa	23 gms
7280-58	fimbriatus	196372	So. Africa	4 gms
7281-58	fimbriatus	196373	So. Africa	2 gms
7283-58	fimbriatus	196375	So. Africa	12 gms
7581-58	fimbriatus	198596	So. Africa	115 gms
8179-58	fimbriatus	203382	So. Africa	27 gms
8180-58	fimbriatus	203383	So. Africa	83 gms
7763-58	pyramidalis	199362	Kenya	15 gms
7585-56+57	usitatus	198598	So. Africa	54 gms
	TETRACHNE			
7595-	dregei	198603	So. Africa	2 gms
	TRICHOLAENA			
7706-57	teneriffae	199986	Ethiopia	7 gms

1962
Legume Seed Renewals
Beltsville, Maryland

BN No.	NAME	PI No.	ORIGIN	Amount
	CORONILLA			
6302-48	scorpioides	186299	Australia	22 gms
7889-59	scorpioides	244311	Spain	1 gm
	CROTALARIA			
6943-49	bagamoyensis	192957	E. Africa	3 gms
6941-49	incana	192955	E. Africa	380 gms
6307-48	mucronata	186304	Australia	6 gms
5831-48	sp.	-	Guatemala	20 gms
	INDIGOFERA			
7747-51	ramosa	199346	Kenya	6 gms
	LATHYRUS			
5738-57	aphaca	175002	Uruguay	92 gms
10184-58	canescens	255366	Yugoslavia	29 gms
6038-49	latifolius v.splendens	-	Colorado	9 gms
5740-57	nissolia	175004	Uruguay	2 gms
	LESPEDEZA			
11572-	bicolor 'Natob'	MA-310-23	Morton Arboretum	11 gms
1129-47	daurica	89107	Peiping, China	11 oz.
3912-52	daurica	151357	China	3 #, 2 oz.
213-50	daurica shimadai	-	SCN, Chapel Hill NC	2 #, 10 oz.
9005-56	daurica shimadai	KL-4-56	PMC, Manhattan Kans	14 oz.
4948-49	hedysaroides	163093	China	2 #, 15 oz.
	LOTUS			
6329-48	purshianus	186326	Texas	12 gms
	MEDICAGO			
6832-49	lupulina	189128	Denmark	18 gms
7118-50	lupulina	NY-713	PMC Big Flats NY	66 gms
7452-50	lupulina	197743	England	31 gms
	STROPHOSTYLES			
9028-57	umbellata	-	Delaware	6 gms
	TRIFOLIUM			
11463-60	baccarinii	268388	Belgian Congo	20 gms
9564-59	hirtum	120247	Turkey	9 gms
	VICIA			
9260-59+60	amoena	246783	Japan	2 gms
7445-59	andicola	197872	Argentina	12 gms
4562-48	angustifolia	-	Volunteer plants	10 gms
8599-57	angustifolia	244330	Spain	129 gms
9371-59	angustifolia	FC-23994	N.E. Reg. PI Sta.	14 gms
10211-59	angustifolia var. segetalis	255398	Yugoslavia	135 gms

1962
Legume Seed Renewals
Beltsville, Maryland

BN No.	NAME	PI No.	ORIGIN	Amount
	VICIA			
8816-58	articulata	238374	Alabama	13 gms
6002-48	disperma	183097	Uruguay	116 gms
8597-58	disperma	263252	Spain	160 gms
11492-60	ervilia	268476	Afghanistan	3 gms
8818-59	globosa	238376	Bulgaria	99 gms
4514-51	grandiflora	SC-26-210	Alabama	32 gms
13535-57	grandiflora	-	Volunteer plts.	21 gms
8820-56+59	ludoviciana	238378	Bulgaria	121 gms
8821-59	macrocarpa	238379	Portugal	46 gms
8823-59	obscura	238381	Brazil	171 gms
10968-59	picta	263699	Czechoslovakia	2 gms
6159-49	sativa	-	Oregon	12 gms
4401-58	tetrasperma		ARS	7 gms
8089-53	villosa	201882	So. Africa	58 gms

National Plant Materials Center

Domestic Distribution of Seed in 1962

Genera	Number of Genera Distributed to:				
	Corn-belt	Great Plains	North-east	South-east	West-ern
Adesmia		1		1	
Aeschynomene		1		2	2
Agropyron			5		3
Agrostis			1		
Alopecurus			1		2
Alysicarpus		2			
Ammophila			2		
Amorpha			1		
Andropogon		1	1	2	1
Aristida					1
Arrhenatherum			2		
Astragalus		9			
Avena					2
Bisserula		1			5
Brachiaria				3	
Brachypodium			1		
Bromus			9		
Calopogonium		1			
Cassia		2			
Centrosema		1			
Chloris					1
Clitoria	1	2			
Coronilla		10			2
Crotalaria				3	7
Cyamopsis					3
Dactylis	2		2		1
Desmanthus		1			
Desmodium		9	3	5	38
Dolichos		1		2	
Echinochloa				21	
Ehrharta					3
Elaeagnus				2	
Elymus			2		
Elyonurus					1
Enchylaena		1			3
Eragrostis		3			3
Festuca	2		4		
Fingerhuthia					1
Glycine		1		7	21
Hordeum					1
Hyparrhenia				4	
Indigofera			3	3	
Iseilema				1	

National Plant Materials Center

Domestic Distribution of Seed in 1962

Genera	Number of Genera Distributed to:				
	Corn-belt	Great Plains	North-East	South-east	West-ern
Lathyrus					1
Lespedeza		9	21	15	
Leucaena				3	2
Lepturus				1	
Limeum					1
Lolium	1		3		3
Lotus		17	6		
Medicago		20	106		1
Melilotus		2	2		
Onobrychis					12
Ononis		4			
Opizia					1
Ornithopus		2			
Oryzopsis					4
Panicum		65	37	119	31
Paspalum				1	1
Pennisetum	2	3		164	1
Pentachistis					1
Phalaris	2		9	2	7
Phaseolus				4	3
Phleum					1
Plagiochloa					1
Poa	1		1		3
Psoralea		5			1
Quercus			1		
Rosa			1		
Rhynchosia		3			
Sanguisorba			5		
Secale					1
Sesamum			2		
Setaria		1		1	2
Sorghastrum			6		
Sorghum					13
Stipa					1
Stizolobium		1		6	11
Strophostyles		1	3	1	
Stylosanthes		6		1	
Tetrachne					1
Tetragonolobus		1			
Themeda					6
Trichachne					1
Trifolium		59	19	1	5
Trigonella		2			
Vicia		5			1
	11	254	259	375	218

Total Genera: 87 Total Packets: 1,147

National Plant Materials Center

Domestic Distribution of Vegetative Material in 1962-1963

BN No.	Species	Amount
7418	Adesmia incana - PI-197845	3
10738	Ajuga reptans	70
11166	Alopecurus arundinaceus - PI-264772	5 sod pieces
11114	Alopecurus pratensis - PI-266470	5 sod pieces
11348	Alopecurus pratensis - PI-267938	4 sod pieces
11712	Alopecurus pratensis - PI-273280	5 sod pieces
11720	Alopecurus pratensis - PI-272288	5 sod pieces
11722	Alopecurus pratensis - PI-273290	5 sod pieces
11727	Alopecurus pratensis - PI-273295	5 sod pieces
11735-	Alopecurus pratensis - PI-273303	5 sod pieces
11737	Alopecurus pratensis - PI-273305	5 sod pieces
11742	Alopecurus pratensis - PI-273310	5 sod pieces
9026	Ammophila breviligulata	2725 seedlings
"	" "	45200 culms
12063	Ammophila breviligulata	5000 seedlings
"	" "	5700 culms
13601	Cornus stolonifera v. occidentalis	10 h/w cuttings
4198	Cynodon dactylon 'Tufcote'	36 sq. ft.
"	" " "	1 bu. sprigs
10880	Dianthus deltoides	20 plts
13458	Digitaria herpoclados - PI-281738	1 flat
NY-2409	Elaeagnus umbellata	5
--	Festuca sp. (Augustine's)	1 sod piece
5008	Indigofera sp.	25
--	Liriope graminifolia	50
NY-3074	Lonicera maackii	5
9764	Maackia amurense	50
12028	Myrica cordifolia	40
8630	Panicum amarulum	100
8553	Panicum amarum	10000
10581	Panicum amarum	20 rhizomes
5888	Pueraria thunbergiana	160 crowns
4191	Robinia pseudoacacia	243
4192	Robinia pseudoacacia	371
4193	Robinia pseudoacacia	175
4194	Robinia pseudoacacia	163
6661	Robinia pseudoacacia	70
8295	Robinia pseudoacacia	125
8316	Robinia pseudoacacia	604
8449	Robinia pseudoacacia	130
8450	Robinia pseudoacacia	125 + 135 rt ctgs
8452	Robinia pseudoacacia	182
8470	Robinia pseudoacacia	182
9229	Robinia pseudoacacia	150
9230	Robinia pseudoacacia	475 + 208 rt ctgs
9282	Robinia pseudoacacia	300 + 81 rt ctgs
11029	Robinia pseudoacacia	75
12312	Robinia pseudoacacia	27 + 110 rt ctgs

National Plant Materials Center

Domestic Distribution of Vegetative Material in 1962-1963

BN No.	Species	Amount
12313	Robinia pseudoacacia	21 + 150 rt ctgs
12314	Robinia pseudoacacia	20 + 381 rt ctgs
12364	Robinia pseudoacacia	21
13602	Salix acutifolia	10
13650	Salix aurita - PI-265662	7
13661	Salix bebbiana	11
13603	Salix candida	10
13697	Salix candida	11
13692	Salix cinerea	17
13690	Salix cordata rigida	20
13685	Salix dasyclados	4
13688	Salix discolor	20
13678	Salix elaeagnos	11
13682	Salix fragilis bullata	14
13604	Salix gilgiana	10
13680	Salix gilgiana	20
13696	Salix glaucophylloides v. glaucophylla	14
13662	Salix gracilis textoris	11
13674	Salix gracilistyla	6
13679	Salix hastata	18
13691	Salix hippophaifolia	12
13657	Salix interior	20
13605	Salix irrorata	10
13684	Salix irrorata	18
13663	Salix medemii	17
13559	Salix multinervis	15
13667	Salix oxica	7
13687	Salix purpurea	20
13675	Salix purpurea gracilis	15
13695	Salix purpurea pendula	20
13560	Salix purpurea sericea	20
13669	Salix purpurea sericea	17
13676	Salix repens	14
13668	Salix repens nitida	12
13689	Salix repens nitida (rec'd as S. arenaria)	12
13653	Salix repens v. rosmarinifolia - PI-265667	h/w ctgs.
13665	Salix rubra	9
13686	Salix seringeana	7
13693	Salix smithiana	10
13658	Salix syrticola	6
13681	Salix tominii	20
8548	Salix tristis	65
13694	Salix tristis	15
13677	Salix uralensis	34
13683	Salix viminalis	20
13652	Salix X chrysostala PI-265663	h/w ctgs.
13562	Salix sp.	5
13659	Salix sp	24
13660	Salix sp.	16
13664	Salix sp.	6

Note: All Salix shipped as hardwood cuttings.

National Plant Materials Center

Domestic distribution of Vegetative Material in 1962-1963

BN No.	Species	Amount
13666	Salix sp.	17
13670	Salix sp.	12
13671	Salix sp.	12
13672	Salix sp.	10
13673	Salix sp.	12
12370	Setaria sphacelata - PI-282707	1 flat
10740	Spartina townsendii - PI-260792	2 flats
11048	Thymus lanicaulis	20
10886	Thymus serphyllum	20
10985	Veronica officinalis	20
8120	Zoysia japonica Z-73	1 bu.
--	Zoysia matrella	1 bu.